IN THE CLAIMS

We claim :

1. A structure comprising a multilayer stack of thin films, said thin films comprising a low-dielectric constant material, said thin films having pores.

2. The structure of claim 1 wherein said low-dielectric constant material comprises an inorganic oxide.

3. The structure of claim 2 wherein said inorganic oxide comprises Silicon Dioxide or silica.

4. The structure of claim 1 wherein said thin films have a porosity of below about 30.0 volume %.

5. The structure of claim 1 wherein said pores are embedded within said thin films.

6. The structure of claim 1 wherein said pores are unconnected.

7. The structure of claim 1 wherein said pores have a size on the order of 0.3-3.0 nanometers.

8. A process comprising:

obtaining a substrate;

depositing a first thin film on said substrate with a first precursor comprising a first set of organic components;

treating said first thin film to release said first set of organic components to leave a first set of pores;

depositing a second thin film over said first thin film with a second precursor comprising a second set of organic compounds; and

treating said second thin film to release said second set of organic components to leave a second set of pores.

9. The process of claim 8 wherein said first thin film comprises a first low-dielectric constant material.

10. The process of claim 9 wherein said second thin film comprises a second low-dielectric constant material.

11. The process of claim 9 wherein said first low-dielectric constant material comprises an inorganic oxide.

12. The process of claim 11 wherein said inorganic oxide comprises Silicon Dioxide or silica.

13. The process of claim 8 wherein said first thin film has a porosity of below about 30.0 volume %.

14. The process of claim 8 wherein said second thin film has a porosity of below about 30.0 volume %.

15. The process of claim 8 wherein said first set of pores are embedded within said first thin film.

16. The process of claim 8 wherein said second set of pores are embedded within said second thin film.

17. The process of claim 8 wherein said first set of pores are unconnected.

18. The process of claim 8 wherein said first set of pores have a size on the order of 0.3-3.0 nanometers.

19. A multilevel interconnect system comprising:

a first metal level;

a multilayer stack disposed over said first metal level, said multilayer stack comprising:

a thin film, said thin film having a low dielectric constant, said thin film having pores; and

a second metal level disposed over said multilayer stack.

20. The multilevel interconnect system of claim 19 wherein said thin

film has a porosity of below about 30.0 volume %.

21. The multilevel interconnect system of claim 19 wherein said pores are embedded within said thin film.

22. The multilevel interconnect system of claim 19 wherein said pores are unconnected.

23. The multilevel interconnect system of claim 19 wherein said pores have a size on the order of 0.3-3.0 nanometers.